IBM WorkFrame/2
Introduction

Version 2.0 (BETA)

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Note!

Before using this information and the product it supports, be sure to read the general information under “Notices” on page vii.

Second Edition (June 1993)

This edition applies to Version 2.0 of the IBM WorkFrame/2 product and to all subsequent releases until otherwise indicated in new editions. Make sure you are using the correct edition for the level of the product.

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Contents

Notices vii
Trademarks and Service Marks vii

Introduction 1
Overview 1
WorkFrame/2 Folder 4
Information Folder 5
Templates Folder 6
Projects 6
Composite Projects 7
Actions Profiles 8
Actions and Projects 10
Performing Actions 12
Learning to Use the WorkFrame/2 Product 14
Related IBM Products 14

Installing the WorkFrame/2 Product 15
Installation on a LAN Server 15
Installation on a Workstation 16
Other Setup Functions 17

What's New for Version 2.0 19

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Figures

1. The WorkFrame/2 Folder 4
2. A Composite Project (CLC) and Two Projects (DLL and LIB) 7
3. Changing an Action in an Actions Profile 8
4. Actions Page in a Project's Settings Note Book 10
5. Options Interface for the OS/2 Linker 11
6. Performing an Action 12
7. WorkFrame/2 Monitor Window 13

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Introduction

The IBM* WorkFrame/2* product offers a unique application development environment that you can easily tailor to your own personal needs. It takes full advantage of the OS/2* Workplace Shell* interface to create a customizable and user-friendly graphical interface that simplifies the process of organizing and building software projects.

This booklet introduces you to the WorkFrame/2 product and tells you how to install it. Installation information begins on page 15.

Note!

You must be running OS/2 Version 2.1 or higher to install and run version 2.0 of the WorkFrame/2 product.

If you are using OS/2 Version 2.0, install WorkFrame/2 Version 1.1 rather than WorkFrame/2 Version 2.0.

Overview

The Workplace Shell enhances your general productivity through its object-action association techniques. With the WorkFrame/2 product, you enhance your programming productivity by using similar object-action techniques specifically customized for software development.

One of the major tasks any programmer faces is the problem of organizing all the code for a software project. Using folders designed specifically for code, the WorkFrame/2 product lets you organize your files in a clear and meaningful manner. See “Projects” on page 6 and “Composite Projects” on page 7 for more information.

Once you have organized code, you will not only need to edit, compile, and debug it, but you will likely want to use special tools

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such as icon editors and performance profilers too. Ideally, you will want these actions easily accessible and easily done. Using the WorkFrame/2's object-action approach, the actions you need are available right on the object's pop-up menu. For example, if the icon represents a C++ file, you compile it just by selecting the compiler you want from its pop-up menu. See “Performing Actions” on page 12 for a full explanation.

In summary, with the WorkFrame/2 product, you can:

- Group source code into folders to give you a visual perspective of how your software projects are organized.
- Organize the actions used to build software applications in a way that is more geared toward the development process than the Workplace Shell association techniques are.
- Set options for actions quickly and easily using graphical user interfaces.
- Integrate the tools you like to use. If you have a favorite editor, your own bitmap viewer, or other tools, you can integrate them along with WorkFrame/2-enabled tools provided by vendors.
- Capture output from actions in a Presentation Manager* (PM) window (see Figure 7 on page 13).
- Create make files and manage object code libraries.

And because the WorkFrame/2 product uses many of the OS/2 Desktop features, you will find it to be a natural extension of the Workplace Shell that is ideal for developing software.

WorkFrame/2 Folder

Once the WorkFrame/2 has been installed, you will see the WorkFrame/2 icon on the OS/2 Desktop. Clicking on the WorkFrame/2 icon causes the WorkFrame/2 folder to open as shown in Figure 1.

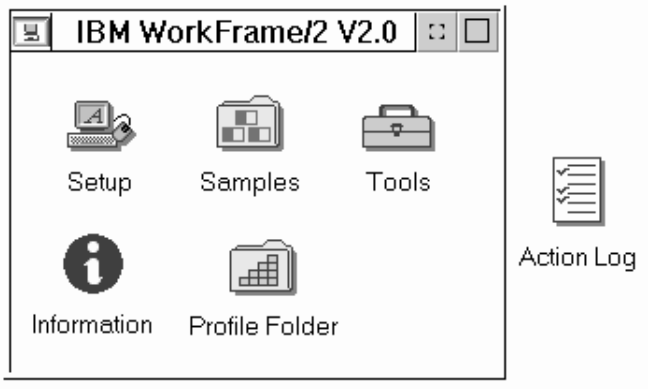

Figure 1. The WorkFrame/2 Folder

The icons in this folder represent various components of the WorkFrame/2 product:

Setup Is the **Setup** program. Use it when you want to reinstall the WorkFrame/2 program, add users to a LAN-based WorkFrame/2 installation, or migrate files from previous versions to this version.

Tools Contains development tools such as utilities for creating make files and managing libraries of object modules.

Information Contains the online books and tutorials that will help you use the product.

Samples Contains the sample code supplied with the WorkFrame/2 product.

Profiles Contains the profiles defining actions (such as compiling and linking) used in the software development process.

Action Log Lets you view and save a record of your activities.

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Information Folder

Online information is available in context-sensitive help and online books. With context-sensitive help, you Press the **F1** key or select the **Help** push button to get context-sensitive help for the selected user interface control. To access an online book, open the **Information** folder in the WorkFrame/2 folder and select what you want to view.

The **Information** folder contains tutorials and online books:

WorkFrame/2 Tutorial
: Teaches you the WorkFrame/2 basic concepts with a step-by-step example of building a software application.

Library Manager Tutorial
: Teaches you how to manage libraries of object modules using the **IBM Library Manager** utility.

Library Manager Reference
: Describes the command line interface of the IBM Library Manager.

Integration Guide
: Describes application programming interfaces (APIs) you can use with the WorkFrame/2 product.

  The WorkFrame/2 product provides a dynamic link library (DLL) with default APIs. However, language vendors and programmers can supply their own DLLs for tools and for accessing resources from non-OS/2 networks. Sample code using the APIs can be found in the **Samples** folder.

Templates Folder

Some of the most important components are not in the **WorkFrame/2** folder but in the OS/2 **Templates** folder.

When you open up this folder, you see three new templates:

WorkFrame/2 Project
WorkFrame/2 Composite Project
WorkFrame/2 Actions Profile.

From these, you can create projects, composite projects, and profiles in the same way you create other OS/2 objects.

Projects

The development of software applications can usually be divided into different components. For example, the components of a software application could consist of an executable file, a dynamic link library, and an online book. There might also be components that are not part of the final product but a component of the development process, such as a class library.

With the WorkFrame/2 product, these different components are referred to as *projects*. A project visually appears as a folder containing the source code for one of these components (see Figure 2).

Projects also contain information used to build the component such as tool options and a make file.

Composite Projects

Composite projects are folders containing projects or other composite projects. Use composite projects to organize the projects associated with the software application.

In the example mentioned previously, there were projects for the following components:

Executable file
Dynamic link library
Class library
Online book.

When open, the composite project for the example would appear as in Figure 2.

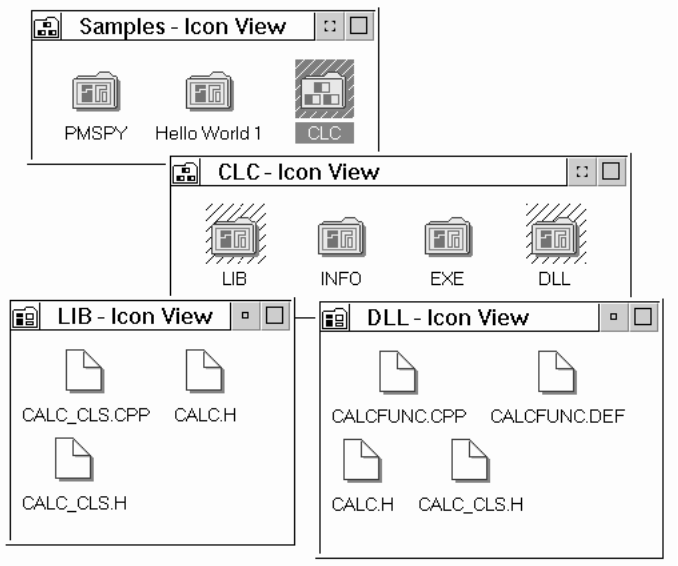

Figure 2. A Composite Project (CLC) and Two Projects (DLL and LIB)

Actions Profiles

The WorkFrame/2 product uses the term *action* in the same sense that the OS/2 Workplace Shell does: an action is a command performed on an object. In the WorkFrame/2 environment, objects include files, projects, and composite projects. You can control which actions appear on the pop-up menus of these objects and set options for each action. The set of actions is known as an actions profile. Each actions profile is represented by an icon. You can see the actions in the actions profile by opening up its **Settings** note book. Actions can be added or changed using an interface like that shown in Figure 3.

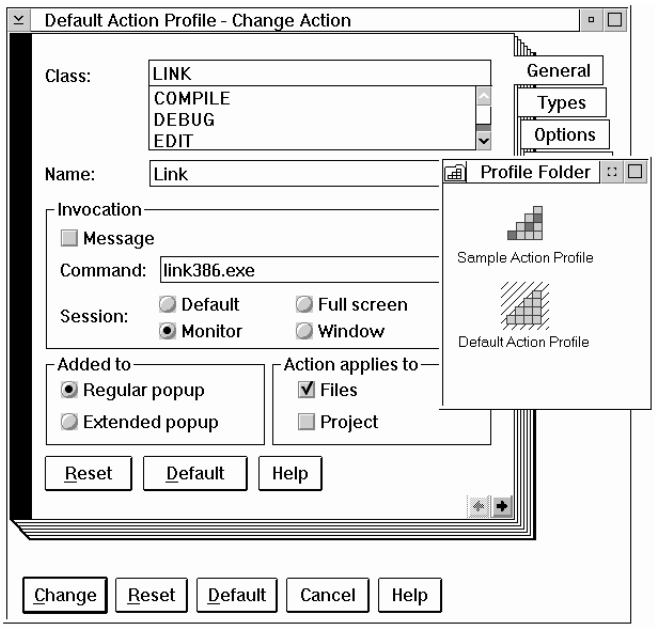

Figure 3. Changing an Action in an Actions Profile

The actions profile defines a number of things, including:

- The class you want the action to belong to. Actions belonging to the same class are grouped together according to their classes (see Figure 6 on page 12).
- The command used to perform each action in the actions profile. In Figure 3, the action with the name ***Link*** is accomplished by starting the program ***link386.exe***.
- The file mask on which the action can be performed. Most actions are performed on only certain types of files. For example, an action that starts a C compiler would not be useful on executable (.EXE) files. Therefore, to specify that the action only appears on the menus of C source files, you would specify the *.C mask.
- The name of the dynamic link library (DLL) containing the interface for setting the action's options.
- Environment variable settings (not shown). For example, you might want to append the PATH environment variable with another path whenever the action profile is used. You can also set your own environment variables. Whatever you specify overrides the environment settings when the action is started. When the action is completed, the environment reverts to the state it had before the action was started.

Language products, such as compilers, that are enabled for the WorkFrame/2 product typically supply an actions profile and options DLL that you can add to the existing ones.

Actions are not limited to those used directly to build the software application. Any tools, such as those for editing icons or counting lines of source code, can be integrated as an action through an actions profile.

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Actions and Projects

Each project has an associated actions profile. You specify the actions profile in one of the settings note book pages for the project. Another page (see Figure 4) lets you specify options for each action.

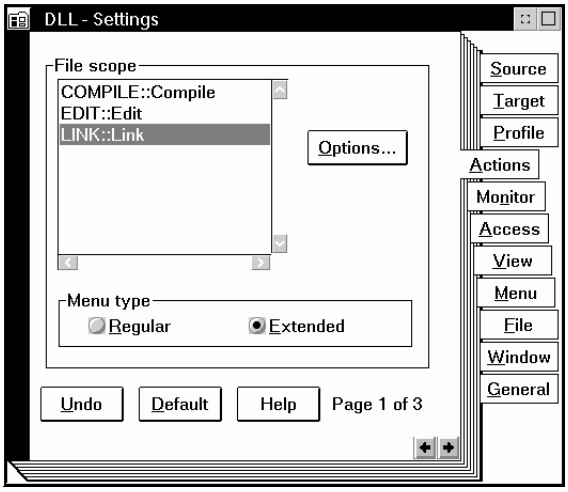

Figure 4. Actions Page in a Project's Settings Note Book

The **Options...** push button on this page lets you specify the options to be used when the selected action is invoked. If the program used to perform the action is enabled for the WorkFrame/2 product, you can use a customized graphical user interface like the one in Figure 5 to select the options. If no customized interface is available, use the default one provided with the WorkFrame/2 product.

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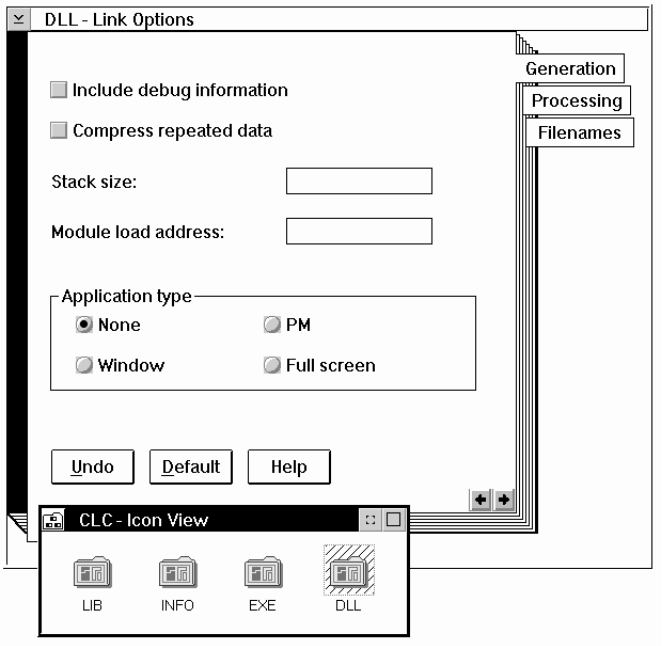

Figure 5. Options Interface for the OS/2 Linker

Because the options are saved with the project, each project has its own, unique set of options for each action.

Performing Actions

Setting up projects and actions is only the organizational aspect of software development. Most of the development process is a cycle of creating the source code, building it into an executable form, and then modifying it until you get the product you want. How do you perform these actions using the WorkFrame/2 product?

When you want to perform an action on an object in the Workplace Shell (such as editing a file), you just point to the icon and select an action from its menu. In the same way, with the WorkFrame/2 object-oriented approach, you first select the icons you want to perform an action upon, and then you select an action from a pop-up menu. Because the options for the action are set in advance and stored with the project, you can ignore them unless you want to change them. The actions you can perform are not limited to those provided by the WorkFrame/2 product. You can define new actions in the actions profile and these actions will automatically appear on pop-up menus such as the one shown in Figure 6.

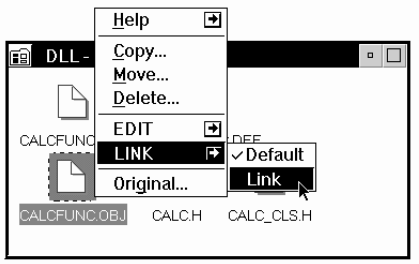

Figure 6. Performing an Action

You can choose to display the output of an action in a text window, a full-screen window, or a WorkFrame/2 monitor window (see Figure 7).

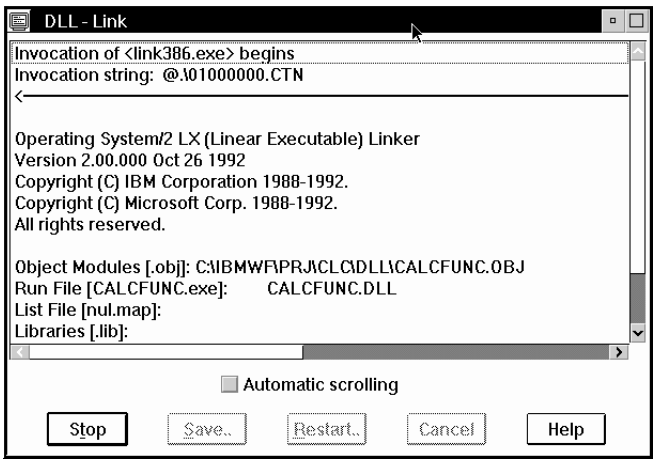

Figure 7. WorkFrame/2 Monitor Window

If an error message in the window contains the name of the file, you can click on the message to start an editing session for that file. If the error message also contains the location of the error, a WorkFrame/2-enabled editor (such as the OS/2 Enhanced Editor) will automatically scroll to the error's location and highlight it. These capabilities make the development process smoother and more efficient.

Learning to Use the WorkFrame/2 Product

Whether you have used the previous version of the WorkFrame/2 product or not, the more familiar you are with the OS/2 Workplace Shell basics, the more productive you will be with the WorkFrame/2 product. View the OS/2 **Start Here** tutorial to learn about the Workplace Shell if you have not already done so.

When you are comfortable with using the Workplace Shell, open the WorkFrame/2 folder on the Desktop. Once it is open, select the **Information** icon to open its folder and then select the **WorkFrame/2 Tutorial** icon to learn about the WorkFrame/2 product.

Related IBM Products

Although the WorkFrame/2 interface is designed to allow you to use any tools you choose, IBM also offers two additional products that integrate into the WorkFrame/2 environment:

The IBM Developer's Toolkit provides development tools such as a linker, a make utility, and other programming aids.
The IBM C/C++ Tools product is a 32-bit SAA* compiler for the C and C++ languages. It includes an actions profile and sample projects designed specifically for use with the WorkFrame/2 product.

Installing the WorkFrame/2 Product

This section will guide you through the WorkFrame/2 installation program. Online help is available for each option, field, and push button. You can get help from the **Help** pull-down menu, or by making the field or push button active and pressing F1. For general information about the currently active window, press F2.

Which installation procedure?

You must be running OS/2 Version 2.1 or higher to install and run version 2.0 of the WorkFrame/2 product.

If you are installing the WorkFrame/2 product on a workstation, follow the steps in “Installation on a Workstation” on page 16. If you are installing it on a local area network (LAN), follow the steps in “Installation on a LAN Server.”

Installation on a LAN Server

You can install the WorkFrame/2 product on a LAN server, either to serve as a base for other installations or to be shared by multiple users.

If you are installing the WorkFrame/2 files on a LAN server to be used as a base for future installations:

1. Insert the first WorkFrame/2 diskette into drive A.
2. From the server, copy the WorkFrame/2 files and directories from the diskette to the target directory on the server. You can use either the Workplace Shell **Drives** program or the xcopy command. In the latter case, the command syntax is:

   xcopy a:\ . *target-directory* /s

   The WorkFrame/2 directory and file structure are copied to the server in the *target-directory* specified. The installation program is also copied to this directory.
3. Repeat the previous two steps for each WorkFrame/2 diskette.

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To then install the WorkFrame/2 product on a client machine, follow the usual installation procedure, beginning at the first step.

If you will be sharing the WorkFrame/2 product across a LAN, follow the normal installation procedure using a target directory on the LAN. Each user sharing the files must then set up the WorkFrame/2 environment on the client machine with the **Add user** option of the **Setup** program described in **Setup** online book.

Installation on a Workstation

1. If you are installing directly from the WorkFrame/2 diskettes, insert the first diskette into drive A. Click on the **Drive A** icon to open a view of this drive. Then click on the **WFSETUP.EXE** program to start it.

   If you are installing from a LAN, uses the **Drives** program to go to the *target-directory* (as defined in Installation on a LAN Server) on the server machine. Once you have opened a view of the target directory, click on the **WFSETUP.EXE** program to start it.

   Note: You can also do the above steps from a command line, by changing to the appropriate drive and directory, and then entering wfsetup.

2. If you have not disabled the logo display from the operating system, the IBM logo appears. Click on the **OK** button or press Enter to proceed.

   A window appears with the installation options. The READ.ME file is displayed in the main installation window. Read this file for the latest information about the WorkFrame/2 product.

3. Specify the drive and directory where you want the WorkFrame/2 to be installed, and whether you want the program to update your CONFIG.SYS file. The IBM-supplied defaults specify IBMWF on your boot drive as the target installation directory, and do not update your CONFIG.SYS file.

   Notes

If you change the target directory, substitute your directory name wherever C:\IBMWF appears in this document.

If you did not have the installation program modify your CONFIG.SYS file, add the WorkFrame/2's DLL subdirectory to your LIBPATH statement.

4. When you have set your options, click on **OK** or press Enter. You are prompted for the diskettes during the installation. A window shows you the status of the installation program, including which files are being installed and the percentage of the total bytes that has been installed.
5. When the installation is complete, a message box appears. Click on **OK** to return to the main installation window, and then select **Close** from the system menu to end the installation program.
6. Reboot your system if you or the program modified your CONFIG.SYS file.

Backup Files:

Before it modifies your CONFIG.SYS file, the installation program first creates a backup copy with the name CONFIG.BAK. If this file already exists, a window appears. You can overwrite the existing backup file, or type a new file name. Then click on **OK**, or press Enter.

If you do not want to create a backup file, click on **Cancel** to close the window and continue with the installation.

Other Setup Functions

Besides installing the WorkFrame/2 product, you can also use the **Setup** program to:

Add WorkFrame/2 users to a LAN environment.

Migrate projects and language profiles from the previous version of the WorkFrame/2 product to this version.

Reinstall the WorkFrame/2 product.

See the **Setup** online help for information about these tasks.

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What's New for Version 2.0

If you have been using previous releases of the WorkFrame/2 product, you will notice how different this version is. The main window with its action bar and pull-down menus is gone. Instead of a main window and secondary windows, you see folders and icons. Instead of an action bar and pull-down menus, each icon has its own pop-up menu. And instead of using WorkFrame/2-specific controls for customizing the environment and using the mouse, you can now use the the standard Workplace Shell techniques.

Not only has the WorkFrame/2 product been redesigned to take advantage of the Workplace Shell, but we've also added some important new features:

Each project can have its source code distributed among multiple directories.

There is no distinction between language profiles and tool settings. Both of these are now organized through the more generic form of actions profiles. Using actions profiles, you can define new actions as illustrated in “Actions Profiles” on page 8.

Note: Actions profiles do not replace the OS/2 association techniques; they complement them.

The Make File Creation utility is more versatile. It now lets you include any action defined in the actions profile as long as its options DLL contains the required programming interfaces.

The installation program has been replaced with a **Setup** program that lets you install, remove an installation, and migrate projects and language profiles from the previous versions.

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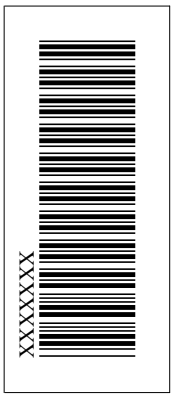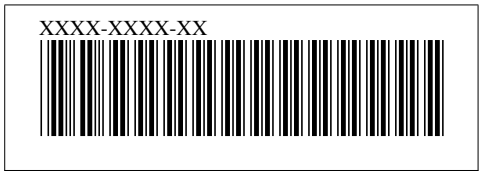
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